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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/895,153	07/02/2001	Koon Gee Neoh	1781-0233P	9536

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EXAMINER	
TSOY, ELENA	

ART UNIT	PAPER NUMBER
1762	

DATE MAILED: 12/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/895,153	NEOH ET AL.	
	Examiner	Art Unit	
	Elena Tsoy	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 October 2005* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *36,39 and 41-52* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *39 and 41-52* is/are allowed.

6)☒ Claim(s) *36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Request for Reconsideration

1. Request for Reconsideration filed on 10/13/2005 has been entered. Claims 36, 39, 41-52 are pending in the application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claim 36 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al (JP56026977) in view of Pohl et al (US 4,455,233), Williams et al (US 4,414,080) and Beratan et al (US 5,016,063) for the reasons of record set forth in paragraph 6 of the Office Action mailed on 7/05/2005.

Allowable Subject Matter

4. Claims 39, 41-52 stand allowed for the reasons of record set forth in paragraph 8 of the Office Action mailed on 7/05/2005.

Response to Arguments

5. Applicants' arguments filed 7/05/2005 have been fully considered but they are not persuasive.

(A) Applicants submit that the Examiner fails to establish a proper case of prima facie obviousness of the invention described in claim 36. In particular, the Examiner does not explain

the motivation that urges the artisan of ordinary skill to combine the references as the Examiner has done. Such explanation of motivation is a requirement of a proper case of prima facie obviousness; this requirement is to prevent the imposition of rejections based upon improper hindsight reconstruction of the invention using the present claim and specification as a template upon which to assemble the elements of the invention taken individually from the prior art. The mere fact that the prior art can be modified is not sufficient; there must be an explanation provided by the prior art ms to why the modification is desirable. See, In re Fritch, 23 USPQZd 1780 (Fed. Cir. 1992).

The Examiner respectfully disagrees with this statement. The Examiner does not explain the motivation that urges the artisan of ordinary skill to combine the references as the Examiner has done.

Sato shows that a photochromic film can be formed:

(i) by introducing *pendant benzyl chloride groups* onto a polymer substrate;

(i) forming a *viologen salt* by reacting the pendant benzyl chloride groups with 4,4' bipyridyl mono aralkyl halide compound;

(ii) coating a *donor* such as polyaniline.

The Examiner has shown that step (i) could be done by other well known method because both methods of introducing *pendant benzyl chloride groups* onto a *polymer substrate* are well known in the art. It is well known in the art that it can be done by chloromethylating polystyrene, as in Sato, or by grafting benzyl chloride groups onto a non-phenyl-containing substrate by irradiation the substrate in a solution of vinyl benzyl chloride as in Pohl. In other words, either well known method can be used for introducing pendant benzyl chloride groups to a polymer

substrate. Therefore, the Examiner had shown clear motivation that urges the artisan of ordinary skill to combine Sato and Pohl.

The Examiner has shown that step (ii) was also known before Applicants' invention. Williams is a secondary reference which is relied upon to show that a layer of viologen can be formed by reaction of 4,4'-bipyridyl at temperatures from about 20^0C to 60^0C, with an equimolar amount of an organic dihalide (See column 6, lines 36-59) in the presence of the substrate (See column 7, lines 1-2), i.e., can be formed on the substrate *in situ*. In other words, viologen salt can be formed on the substrate having pendant benzyl chloride groups by reacting the pendant benzyl chloride groups with 4,4'-bipyridyl and an equimolar amount of an organic dihalide. Therefore, the Examiner had shown clear motivation that urges the artisan of ordinary skill to combine Sato and Williams.

The Examiner has shown that polyaniline is a well-known electron donor for the use with viologen salt acceptor, as evidenced by Beratan et al.

Moreover, in response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

(B) Applicants submit that the primary reference Sato characterized by the Examiner as describing photoreduction of a viologen salt by a polyvinyl alcohol, providing a photochromic

effect. Sato does not at all describe any sort of a conductive polymer being formed. The Examiner is confusing an oxidation of the polyvinyl alcohol (chemical transfer of an electron from the PVA) with a conductive state (mobility of electrons down a voltage gradient). The main objective of Sato is to obtain a composition which exhibits high photosensitivity and film forming activity.

The Examiner respectfully disagrees with this argument. Photoreduction of a viologen salt by polyaniline in Sato et al in view of Pohl et al, Williams et al and Beratan et al occurs because of electron transfer when irradiated with a 200W mercury-arc lamp (claimed near-ultraviolet radiation), i.e. due to electroconductivity, just like in claim 36.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is 571-272-1429. The examiner can normally be reached on Monday-Thursday, 9:00AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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PRIMARY EXAMINER
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Elena Tsoy
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Art Unit 1762

December 1, 2005